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A Comparison of Indicators of Female Empowerment and Selected Socioeconomic
Indicators in India from the 1998-1999 and the 2005-2006 Demographic and
Health Surveys

By: Katherine Kroell

Bachelors of Science in Biology

A Thesis Submitted to the Graduate Faculty of Georgia State University in Partial Fulfillment of
the Requirements for the Degree

Master of Public Health

Atlanta, GA 30303

A Comparison of Indicators of Female Empowerment and Selected Socioeconomic Indicators in India from the 1998-1999 and the 2005-2006 Demographic and Health Surveys

By

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Acknowledgements

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CHAPTER I INTRODUCTION

1.1 Background

The Millennium Development Goals (MDGs) set forth by the United Nations Millennium Summit in 2000, have dramatically shaped health and development initiatives around the globe. A total of 189 nations agreed to work towards achieving these extensive targets. The MDGs are a series of goals aimed at improving health and well-being, decreasing health disparities, and promoting environmental sustainability. These targets cover a variety of health-based themes, such as ending poverty, reducing child mortality, and improving access to clean water and sanitation. Unfortunately, some MDGs have had limited progress in reaching specific objectives.

MDG3 is to promote gender equality and empower women. Advancement towards the MDG3 has encountered significant obstacles in certain areas. The World Health Organization (WHO) defines gender equality as a social environment which allows universal access to resources and services for all individuals regardless of gender (WHO, 2008). Women's empowerment means increased political, social and economic status allowing women the authority and skills to make strategic decisions about their own lives (WHO, 2008). Another key to this achieving MDG3 is providing education to women and girls so that they gain the knowledge to make these important decisions.

Achieving gender equality and empowering women is the objective of the MDG3. Targets were set for each MDG to direct specific development agendas and focus efforts towards

achieving the goal. The target for MDG3 is to eliminate gender disparities in primary and secondary education by 2005. Tragically, this target was not completed by 2005. The additional target is to eliminate gender disparities in all educational levels by 2015. Indicators were drafted for each MDG as well to measure the progress towards each goal. The indicators for MDG3 include:

1. The ratio of girls to boys in primary, secondary and upper levels of education.
2. The proportion of women holding income-earning employment in non-agricultural part of the economy.
3. The number of political seats held by in women in national parliaments.

(Millennium Project, 2006)

MDG3 provides an important framework in which to improve the quality of life for women and girls. The clarification of specific targets creates a valuable outline to track progress. MDG3 has also guaranteed funding for the research specific to the health issues faced by women and girls. The United Nations Development Fund for Women (UNIFEM) has outlined certain actions to accelerate progress towards MDG3. UNIFEM (2008) suggests:

- **Provide education to women and girls.** In most instances, educated women play a greater role in making decisions regarding their personal life, community, and other social environments.
- **Overcome barriers to schooling for girls.** Progress has been made in increasing attendance for children in primary school. However, increasing secondary school attendance has encountered significant barriers. These barriers to attendance include, but are not limited to: lack of private and separate sanitation facilities,

the threat of harassment or violence en route to school, and the perceived irrelevance of the curriculum.

- **Promote initiatives that give women a voice in governance institutions.**

Increasing the political and social power of women is essential to creating policies that support and accelerate female empowerment. Political methods to strengthen the proportion of women in political roles can vary from creating a more transparent party selection procedure or reducing the structural disadvantages faced by women. Women around the world are currently involved in strengthening democracies but their participation is still proportionately much less than men.

- **Endorse and put into practice equal economic rights for everyone.** This broad category encompasses many strategies, such as: equal pay standards, freedom to choose employment, equal opportunity in hiring and promotions, guarantee of a safe workplace environment absent of sexual harassment as well as other hazards, and leave and unemployment compensation. These policies may be supported by existing laws but enforcement may be limited or completely lacking.

Enforcement of these equal economic rights would benefit women as well as society as a whole.

- **Improve data collection of women's contribution to the economy.** Minimal resources are available of disaggregated data so it is difficult to assess wages given to women, the informal economic sectors, and other areas that impact the daily lives of women. Setting research priorities to collect accurate data on the working environments of women could inform economic policy.

(p. 3)

These areas of focus summarized by UNIFEM create an outline from which development efforts may be structured. The creation of the MDG3 highlighted the inequalities faced by

women and girls. Changing the social institutions that reinforce gender inequality will take innovative approaches and focused efforts.

In order to make progress towards achieving the MDG3, accurate research on gender equality and female empowerment is crucial. Specifically, data spanning numerous years is important to show how an indicator may be changing. Data collection for MDG3 progress is often related to the specific indicators selected to monitor this goal. However, other measurements have been used to estimate gender equality and female empowerment. For example, a proxy to measure the level of female empowerment could be the number of autonomous decisions made by the individual.

The Demographic and Health Surveys (DHS) has collected and disseminated health information on numerous indicators, including female empowerment as well as other health-related statistics. India is one of the countries included in the database. The national-representative health survey is titled the National Family Health Survey (NFHS). The NFHS has collected vital health information three separate times. The last two surveys, the NFHS-2 and NFHS-3, included a Women's Questionnaire. The Women's Questionnaire was administered to women aged 15-49 within the selected households. The questionnaire covered a wide range of topics, including indicators related to female empowerment and gender equality. The Women's Questionnaire in the NFHS-2 measured women's participation in household decision-making, freedom of movement, financial autonomy, and their attitude concerning domestic violence (National Family Health Survey (NFHS-2), 1998-1999, 2000). The NFHS-3 expanded the indicators concerning female empowerment and gender equality. In NFHS-3 the measurements associated with female empowerment were: son preference, gender difference in education, spousal age differentials, employment status, access to resources, household decision-making,

and attitudes towards spousal violence (National Family Health Survey (NFHS-3), 2005-2006, 2007). Two indicators analyzed during both surveys were the level of decision-making and freedom of movement. The objective of this study is to compare these two indicators, which were about decision-making concerning personal healthcare and freedom to stay with relatives.

1.2 Purpose of Study

The purpose of this study was to compare the selected indicators of female empowerment gathered in the Demographic Health Survey, conducted in India as the National Family Health Survey. The National Family Health Survey (NFHS) is a country-wide, nationally representative survey that collects important information on household characteristics, health information, and other topics, such as family planning.

Two different years of the NFHS were compared to examine areas of change in selected indicators of female empowerment. Specifically, the level of decision-making and autonomy was assessed through the questions located in the Women's Questionnaire of the NFHS. These data sets from NFHS-2 and NFHS-3 were used in this research. NFHS-2 was conducted beginning in November 1998 and continued through 1999. NFHS-3 was completed from December 2005 to August 2006. Each of the surveys contained a Women's Questionnaire but the specific questions varied slightly. Two indicators analyzed during both surveys were the level of decision-making and freedom of movement. The objective of this study is to compare these two indicators, which were about decision-making concerning personal healthcare and freedom to stay with relatives.

1.3 Research Questions

This study attempted to answer the following research questions.

1. Based on select questions from the Women's Questionnaire, does autonomous decision-making, regarding personal healthcare and staying with relatives, increase or decrease in period from 1998-1999 to 2005-2006 in married women from a nationally-representative survey in India?
2. Does the place of residence (urban versus rural) affect the level of decision-making reported by the participants?
3. Does age of respondent and education attainment influence the individual's level of decision-making in the household?

CHAPTER II

REVIEW OF THE LITERATURE

2.1 Gender Equality and Female Empowerment

The WHO defines gender equality as the equal opportunity for women and men to access and utilize the wide variety of social services and resources available within society (WHO, 2008). These opportunities extend to equal protection under the law and the power to make decisions. Female empowerment is defined as increasing the social, political, and economic status of women and thus enabling them to play an active role in decision-making processes. Strategies to increase female empowerment include reducing gender discrimination or raising awareness of gender inequalities (WHO, 2008). The concepts of gender equality and female empowerment are uniquely linked. An empowered individual can work towards gender equality. A social environment which values gender equality can foster women and girls to become empowered.

Data on these targets and indicators continue to be gathered in many regions of the world. Progress has been made in many regions except South Asia and Sub-Saharan Africa (Millennium Project, 2006). One target of the MDG3 is to eliminate gender differences in primary and secondary education attendance. It has been estimated that 57% of children absent from school are girls (Steinberg, 2008). Schultz (2001) argues that focusing on educating women and girls can have important social and economic benefits that have the potential to advance other development goals.

2.2 Women's Education

In many parts of the world, the ratio of boys and girls in primary education is almost equal (World Bank, 2011). Increasing primary education is crucial but the Millennium Project (2006) suggests that focusing on secondary education attendance, as well as higher education, may provide a higher increase in the level of female empowerment. The reason given for concentrating on secondary education is that significantly less progress has been achieved in the area of secondary education. The Millennium Project (2006) goes on to stress that each level of education should not be separated but the educational structure should be seen as one system. In addition, the educational system should be a vehicle for changing beliefs, attitudes, and social norms in the direction of gender equality (Millennium Project, 2006).

In 2000, the United Nations launched the United Nations Girls' Education Initiative (UNGEI) as a mechanism to focus efforts on the disparities in girls' education (UN Development Group, 2010). This initiative has advocated for greater access to education for girls at global, regional, and local levels. The UNGEI has recognized several strategies that have been successful in increasing school attendance for girls. First, the elimination of user fees to attend school can reduce a barrier to education as well as promote free universal primary education (UN Development Group, 2010). The report also noted that community and NGO-managed schools have made progress in providing education, particularly in areas where infrastructure may not be present for public schools. Many NGO-managed schools in Bangladesh have provided free education to girls up to the grade eight. These programs have been a significant force behind the success this country has achieved in gender parity in school attendance (UN Development Group, 2010).

Increasing school attendance is only part to the equation to provide the same quality of formal education for women and girls. Full gender equality in education means that boys and

girls are given the same opportunity to attend school, are provided with the equivalent teaching methods, and are ensured a safe school environment (UNESCO, 2003). Based on these criteria, the curriculum should also be free of stereotypes and bias. General equality in education should translate into better educational outcomes for girls. Improved educational outcomes would mean that girls have the same length of formal education available to them, have been given the tools to meet the same academic standards, and in the broadest sense, be qualified for the career of their choosing (UNESCO, 2003). For education to become truly equal, it will require adjustment in many academic levels, from primary to higher education. To facilitate equal educational outcomes, major changes would have to occur in the wider social network of many countries (UNESCO, 2003).

2.3 Women in the Economy

The second indicator of MDG3 is the proportion of women employed in non-agricultural positions. Due mainly in part to international economic development, the ratio of women employed outside of agriculture increased in 93 of 131 countries between the years of 1990 and 2002. Even with this shift in employment, women are still at a considerable disadvantage in the labor market. For instance, women make up the majority of individuals employed in the informal sectors of the economy. Azad estimated that women make up 94 percent of the informal economy worldwide and about 89 percent in India (1996). The informal sector offers minimal protection, no job security, and wage standards are largely absent. This means that women working in informal positions are much more vulnerable than individuals within the formal economy (Millennium Project, 2006).

The largest proportions of women are now part of the economic market, mainly due to economic growth and new labor market opportunities available to women (World Bank, 2011). In spite of this increase in economic participation, there remain persuasive gender differences in productivity and earning potential across a variety of professional sectors (World Bank, 2011). In many regions, women bare the largest burden of domestic duties. Work completed in the domestic sphere often comes without monetary compensation and thus limiting financial freedom. Domestic work or work based from the home often lacks legal protection and structured retirement plans, such as social security (WHO, 2002). Jobs traditionally open to women, like house cleaning and childcare, are often low-paying and are associated with a lower social status. The limited access to jobs and the constant juggling of household tasks can reinforce the inferior position and roles experienced by some women.

Reducing the earning gap between men and women would be an important catalyst to creating equality in the workplace and the economy. The World Bank asserts that the main reason for the difference in productivity and earnings is due to jobs available to men and women (2011). A significant part of the gender differences in employment may be attributed to the fact that women are more likely than men to work in industries, jobs, and sectors with lower average labor productivity (World Bank, 2011). Securing women equality in the workplace is an important part of empowering women. The financial benefits from equal pay and a safe working environment

2.4 Women in Governance

The number of seats held by women in national parliament can be indicative of the political and social climate. The option to have a political voice is a human right. Increasing female representation in governance institutions is a vital part of attaining gender equality. Additionally, when women are given political power they have the ability to protect women's rights and further promote gender equality. In countries where women make up less than 30 percent of the political positions the governments tend to be less inclusive, less democratic, and less responsive. (Millennium Project, 2006)

Increased political participation by women allows the protection of their political decision-making power. It has been shown that women are more likely to endorse policies that benefit women, children, and families (UN Millennium Project, 2005). Research also suggests that when women are involved in government, it has a positive affect on the quality of governance (UN Millennium Project, 2005). Many countries have enacted policies to encourage women representation in government. For example, these programs France and India have resulted in considerable jumps of women's participation in local governments. Indian women in local political organizations, termed *panchayats*, have encouraged the governance to be responsive to community demands for improvements in schools, health, infrastructure, and housing (UN Millennium Project, 2005).

Even though women have seen increases in local political representation, seats in national parliaments still remain low in most regions. To increase the proportion of women in national governance, policymakers have engaged several mechanisms. The main mechanisms have been party quotas, statutory quotas, and reservations for women candidates (UN Millennium Project, 2005). A strong women's movement supported by men and women alike, has the potential to allow equal political participation. Women in positions of leadership signify a society which

values gender equality. Equal political participation can facilitate greater social change promoting women's rights (UN Millennium Project, 2005).

2.5 The Gender System

The gender system is a social construct dividing individuals into categories. The gender system regulates most aspects of society. Gender defines social norms, accepted behaviors, values and roles within particular cultures. Gender norms often dictate what is socially appropriate for men and women. Cultural beliefs form the basis for the gender system. The gender system is reinforced by social interactions. Power dynamics play a pivotal role in the definition of gender norms. Inequalities in power can favor one gender and place the other at a disadvantage (Ridgeway & Correll, 2004).

The enforcement of the gender system maintains social accord. If the gender-based social norms are not adhered to, the deviant individual could face dangerous consequences or other risks. These risks could include violence against women and girls, denial of education, limited mobility, discrimination, economic disadvantage, sexual assault, exploitation, and political disenfranchisement (Keleher & Franklin, 2008). The potential risk associated with acting against the gender system creates inequalities within society. Women and girls are put at a disadvantage due of the power inequalities within the gender system. These inequalities manifest themselves in various areas. For example, gender norms are enabled by social institutions that create laws and policies that perpetuate the inequalities (Keleher & Franklin, 2008). As women challenge the patriarchal gender system, social friction can emerge. This social conflict and struggle are exaggerated in developing nations (Keleher & Franklin, 2008).

As these societies develop, the traditional roles and customs can serve as a barrier to female empowerment.

2.6 Women in Developing Nations and India: Current Research

In order to meet the MDGs, communities in low resource areas, especially developing nations, must allocate funds for programs that benefit women and girls. In most societies, women and girls are the primary caregivers. Women and girls also play a fundamental role in providing meals and food production (UNFPA, 2005). The improved contribution of women and girls has the opportunity to positively influence the health of their families. When gender inequality is reduced, the earning power of women can be elevated. In addition, when women are given the opportunity they have the tendency to invest the capital in the improvement of the lives of their family members (UNFPA, 2005). So if development resources are devoted to women and girls, the influence of these assets has the potential to improve the health of all individuals in the community.

The inequalities faced by women and girls are persuasive in patriarchal societies, such as India (Kishor & Gupta, 2009). In India, these gender inequalities are reflected in health and population indicators. The NFHS have collected data on some of these gender-based indicators. For example, sex ratios at birth, infant and child mortality by sex, and age at marriage for women (Kishor & Gupta, 2009). Other gender-related indicators are access to household resources, education, income, and freedom of movement (Kishor & Gupta, 2009). According to NFHS-3 data, women in India have lower per capita resource access than men since more women are part of the lower wealth quintiles and less are in the higher wealth categories (Kishor & Gupta, 2009).

NFHS data has been used to investigate the lower status of women in India (Gupta & Yesudian, 2006). Questions from the Women's Questionnaire in NFHS-2 were utilized and organized into four indices: household autonomy, mobility index, attitude towards gender index and attitude towards domestic violence index (Gupta & Yesudian, 2006). These indices were constructed to estimate the level of decision-making as well as the different dimensions of female empowerment (Gupta & Yesudian, 2006). This study found that the majority of women have a low freedom of movement and the household autonomy level was even lower (Gupta & Yesudian, 2006). This study also found a positive association with age and household autonomy. The authors reported that the level of female empowerment increased as the amount of education increased across all of the indices. In addition, women who are employed had higher household autonomy and freedom of movement (Gupta & Yesudian, 2006). Based on this study, education and age were selected as covariates for this study.

Chapter III

METHODOLOGY

3.1 Data Sources

In 1984, the Demographic Health Surveys (DHS) project was established with initial funding from the U.S. Agency for International Development. Since creation the DHS has been responsible for a multitude of health-related data collection. The DHS has supported many countries in building research capacity and administering surveys. Data sets from some of these surveys are available on the DHS website. One country participating in data collection is India. With permission, the survey datasets were available from the DHS website.

The national household survey in India is titled the National Family and Health Survey (NFHS). The first NFHS-1 was completed in 1992 -1993. For the second survey, the survey tool was expanded. The NFHS-2 covered demographic and health components as the earlier measurement but added questions assessing social programs, reproductive health issues, domestic violence, and the status of women. NFHS-2 was conducted from 1998 to 1999. The sample size was 89,199 ever-married women aged 15-49. From 2005-2006, the NFHS-3 was conducted. The NFHS-3 included the topics from the previous surveys as well as new questions, such as HIV testing to estimate HIV prevalence. Interviews were completed with 124,385 women from all of the 29 states. For the NFHS the households were selected using systematic sampling with equal probability from the household list. Table 1. shows the NFHS sample of women and the study sample.

Table 1. Total NFHS Sample Size and Study Sample Size

	NFHS-2	NFHS-3	Total
NFHS Sample Size of Women	89,199	124,385	213,584
Study Sample Size	84,862	87,925	172,787

3.2 Study Variables

Main Variables

The main exposure variable of this study was the survey years. NFHS-2 was the referent survey year and NFHS-3 was the second survey year. The purpose of comparing the two years was to uncover any differences or similarities that exist between the data gathered in the two separate years.

Dependent Variables

The dependent variables for this study were chosen because they can serve as indicators of gender equality and female empowerment. The two variables were the ability to decide about personal healthcare and freedom of movement. For NFHS-2 the healthcare question was: “Who makes the following decision in your household [about] obtaining health care for yourself?”. The answers for this question were as follows: respondent, husband, jointly with husband, others in the household, and jointly with others in household. For NFHS-3, the question about healthcare was: “Who usually makes the following decisions about health care for yourself?”. The answers were: respondent, husband, respondent and husband jointly, and someone else.

Analyzing the level of decision making concerning healthcare is important because it is a direct link to overall health. In order to estimate autonomous decision-making, the answers were condensed into two categories, respondent alone and all other responses. Autonomous decision was coded with a “1” and all other answers were coded as a “0” for statistical tests.

To estimate the level of mobility the NFHS asked the respondent about the decision to stay with relatives. For NFHS-2 the question about staying with family was, “Who makes the following decision in your household [about] Your going and staying with parents or siblings?”. The possible answers were: “Respondent, Husband, Jointly with Husband, Others in Household, Jointly with Others in Household.” For NFHS-3 the question and answers were framed in this way: “Who usually makes the following decisions about visits to your family or relatives?. The answers were: mainly you, mainly your husband, you and your husband jointly, or someone else...”. Decisions made by the respondent alone were coded with “1” and all other response were coded with a “0” for the statistical tests. Table 2. below summarizes the key variables and the corresponding survey questions and answers.

Table 2. Key Variables

Variables	NFHS-2 Questions and Answers	NFHS-3 Questions and Answers
Decision on Healthcare	Who makes the following decision in your household [about] obtaining health care for yourself? Answers: Respondent, Husband, Jointly with Husband, Others in Household, Jointly with Others in Household	Who usually makes the following decisions bout health care for yourself? Answers: Mainly you, mainly your husband, you and your husband jointly, or someone else...
Decision about Staying with Relatives	Who makes the following decision in your household [about] Your going and staying with parents or siblings? Answers: Respondent, Husband, Jointly with Husband, Others in Household, Jointly with Others in Household	Who usually makes the following decision about visits to your family or relatives? Answers: Mainly you, mainly your husband, you and your husband jointly, or someone else...
Highest Educational Level	Highest Standard Completed Answers: No Education, Incomplete Primary, Complete Primary, Incomplete Secondary, Complete Secondary, Higher Education	Highest Standard Completed Answers: No Education, Incomplete Primary, Complete Primary, Incomplete Secondary, Complete Secondary, Higher Education

Type of Residence Age Range in Groups	Assigned by Census Information	Assigned by Census Information
	Assigned by Date of Birth	Assigned by Date of Birth

The additional variables were selected based . Age and education are common factors that influence health. Place of residence may also influence the level of decision-making. For example, proximity to healthcare and other services could impact access.

3.3 Analysis

The initial analysis was a binary logistic regression performed in SPSS. The level of decision-making on personal healthcare was compared between the two survey years. The number of respondents who made the healthcare decision alone was the reference group. The next analysis concerned the decision to stay with relatives. A logistic regression was conducted comparing the number to respondents who decided individually to stay with family between the two survey years.

A multivariate logistic regression was conducted with SPSS to include the additional variables of interest. The first model stratified on urban and rural residents and included the decision on healthcare. The change between the two survey years based on the place of residence was gathered. The ability to decide independently to visit relatives was also measured depending on place of residence to show the difference between the two survey years.

The final logistic model included all of the variables of interest. The model with the decision on healthcare compared the two survey years and took into account the change in the age groups, education levels, and place of residence. The model with the decision about staying

with family compared the difference between the two survey years and the influence of age, education, and place of residence.

Chapter IV

RESULTS

4.1 Study Population

For the purpose of this study questions within the Women's Questionnaire for both surveys were the main part of the data analysis. Diagram 1 and 2 below shows the sample size utilized in the analysis and the construction of each sample. For the NFHS-2 study sample, only women who indicated they were currently married were included in this study population.

Diagram 1. Describing Study Sample for NFHS-2

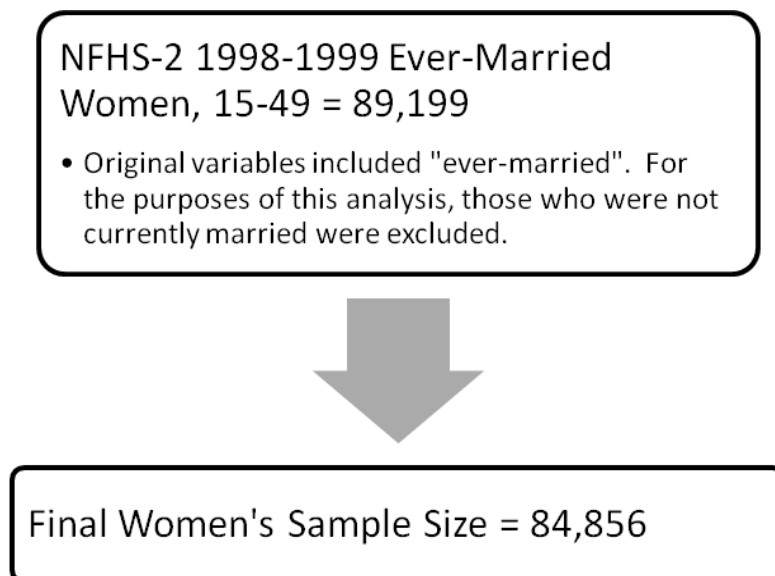


Diagram 2. shows the creation of the study sample from the total NFHS-3 population. Women who indicated a marital status other than currently married were excluded from the data set.

Diagram 2. Study Sample for NFHS-3

NFHS-3 2005-2006

Women, aged 15-49 = 124,385

- Original variables included all women. those who were not currently married were excluded for the purpose of this analysis.



Final Women's Sample Size = 87,925

Current age was estimated and the respondent was placed into the following five-year age groups. For the purpose of this study, age groups were used. The largest age category was 25-29, with 20.4% of the study sample. The smallest age group was 15-19, with 6.8% of the study sample. This age group may be smaller since some of the respondents who were of this age may have not be “currently married”, and thus excluded from the study population. The age range of 45-49 was the second smallest category with 9.1% of the sample. The majority of the sample, with 55.9%, are 20 to 34 years of age. During the analysis, age was a covariate in the multivariate logistic regression model to determine the influence it may have on decision making power. Table 3 below details the respondents in each age group and the percentages of the study sample.

Table 3. Age in 5-Year Groups *

Age Range	NFHS-2 (%)	NFHS-3 (%)	Total (%)
15-19	6,888 (8.12)	4,817 (5.5)	11,705 (6.8)
20-24	15,529 (18.3)	14,441 (16.4)	29,970 (17.3)

25-29	17,486 (20.6)	17,708 (20.1)	35,194 (20.4)
30-34	15,042 (17.7)	16,340 (18.7)	31,382 (18.2)
35-39	12,779 (15.1)	14,634 (16.6)	27,413 (15.9)
40-44	9,852 (11.6)	11,616 (13.2)	21,468 (12.4)
45-49	7,286 (8.58)	8,369 (9.5)	15,655 (9.1)
Totals	84,862 (49.1)	87,925 (50.9)	172,787

*Missing = 0

The NFHS selected households in urban and rural areas to interview. The classification of the residence was based on Census data. For the NFHS-2, the 1991 Census list of villages served as the sampling frame for the rural households. For an area to qualify as urban the population had to be above 4,000, have a population density to 400 persons per square kilometer, and at least 75% of the male population employed in the non-agricultural sector (<http://censusindia.gov.in/Metadata/Metada.htm#2b>). The urban households for the sample pool were arranged in districts with similar methods as the rural households. For the NFHS-3, 2001 Census data served as the basis for household list and the sample selection was similar to the NFHS-2. For a region to be classified as urban, the location must have a minimum population of 5,000, a population density of at least 400 square kilometers, and at least 75% of the employed male population working in the non-agricultural sector. (<http://censusindia.gov.in/Metadata/Metada.htm#2b>). Table 4 shows the number of households in urban and rural areas.

Table 4. Type of Residence

	NFHS-2 (%)	NFHS-3 (%)	Total (%)
Urban	26,308 (31.0)	38,382 (43.7)	64,690 (37.4)

Rural	58,554 (69.0)	49,543 (56.3)	108,097 (62.6)
Total	84,862 (49.1)	87,925 (50.9)	172,787

As shown in Table 4 above, the majority of the population in India is classified as residing in rural areas, 62.6% for both survey years. However, there was an increase from 31.0 to 43.7% of the sample percentage that was classified as urban between the two survey years. This was a significant increase in urban residents, by chi-squared test, but most respondents still reside in rural areas. This variable, which is changing, will be explored later by looking at changes in both urban and rural women's decision making power.

Another important variable the NFHS collected data on was the amount of education received by the respondent. Questions about education included: years of education, highest educational level, educational attainment, and school attendance. Highest educational level contained the most complete data for each survey year. Table 5 below shows the data on educational attainment for the two survey years and the totals of the study sample. A large proportion of women in both years reported having no formal education. However, almost one third of the respondents reported completing at least secondary education. While a large proportion of women reported having no formal education, this percentage decreased from NFHS-2 to NFHS-3 (49-38%). In addition, a larger proportion reported completing secondary education although slightly fewer women reported having any primary education. The smallest proportion of women indicated that they completed higher education.

Table. 5. Highest Education Level *

Education Level	NFHS-2 (%)	NFHS-3 (%)	Total (%)
No Education	41,776 (49.2)	34,108 (38.8)	75,884 (43.9)

Primary	14,335 (16.9)	13,551 (15.4)	27,886 (16.1)
Secondary	20,618 (24.3)	32,474 (36.9)	53,092 (30.7)
Higher	8,111 (9.6)	7,787 (8.9)	15,898 (9.2)
Totals	84,840 (49.1)	87,920 (50.9)	172,760

*Missing = 27

4.2 Statistical Results

Decision on Healthcare

Due to the large nature of the NFHS survey the sample size analyzed was over 172,000 for each dependent variable. The first dependent variable that was analyzed using logistic regression was whether or not a woman's power to make her own decision about healthcare changed between the two survey years. As shown in Table 6, based on data from NFHS-2, only 26.3% married women aged 15-49 made decisions about their personal healthcare alone and 73.7% did not have the power to choose by themselves. In NFHS-3, 28.1% of the sample indicated they decided independently about their own healthcare. This represents a slight increase over the 26.3% from NFHS-2. Table 6 shows the data on the healthcare decision.

Table 6. Decision on Healthcare

Variable	Response to Question	NFHS-2 (%)	NFHS-3 (%)	N
Decision on Obtaining Healthcare	Other than Respondent Alone	62,532 (73.7)	63,137 (71.9)	125,669 (72.8)
	Respondent	22,322 (26.3)	24,720 (28.1)	47,042 (27.2)
	Total	84,854	87,857	172,711
	Missing	8	68	76

Based on the analysis, there was a significant difference between NFHS-2 and NFHS-3 regarding the proportion of women who were able to make the decision on personal healthcare. The standard error for these calculations was very small as well, ranging from 0.01 to 0.02. For the urban residents, only 31.4% indicated that they had the ability to decide about personal healthcare by themselves. Only 24.7% of rural women said that they could decide on health alone. In order to further investigate the relationship between place of residence and decision-making ability, multivariable models compared the total sample to urban and rural respondents. In order to perform this analysis, NFHS-2 was set as the referent group and it was examined whether or not there was an increase in odds of reportedly making decisions about healthcare independently. The NFHS-2 results and it was compared to NFHS-3. The odds ratio comparing the ability of a respondent to make her own decision regarding healthcare was 1.10 times as high in NFHS-3 as it was in NFHS-2. This ratio increased to 1.19 when adjusted for age and education.

When this relationship was stratified by urban and rural place of residence different results were found for each. For urban residents, the odds ratio prior to including other variables such as age and education level was 0.9 comparing those urban women in NFHS-2 versus NFHS-3. In the multivariate model, the odds ratio for urban women was 0.88. However, after stratifying on education the odds ratio was 1.05 and when stratified on age it was 1.19. Based on these results, age seems to have a larger impact on the healthcare decision making power of urban women.

For rural women, the odds ratio for independently making the decision on healthcare independently was 1.18 times higher in the NFHS-3. Table 8 below, shows the odds ratio for rural women. This increase in decision-making was seen in the multivariate model as well. In

the multivariate model, the odds ratio for rural women was 1.12 higher in the later survey year. When stratified on age, the odds ratio was 1.19 times higher for rural in NFHS-3 than in the earlier survey year. As education as a covariate, the odds ratio for rural women was 1.13. According to this analysis, age also has a larger influence on the level of decision making for rural women.

Table 7. Decision about Healthcare and Selected Socioeconomic Indicators

Model Type	Odds of Respondent making decision on Individual healthcare Alone	Urban: Odds Ratio	Rural: Odds Ratio
Univariate (95% Confidence Interval)	1.10 (1.08-1.22)	0.90 (0.87-0.93)	1.18 (1.14-1.21)
Multivariate: Survey Year	1.04	0.88	1.12
Multivariate: Age in Five Year Range	1.19	1.19	1.19
Multivariate: Education Level	1.13	1.05	1.13

Multivariate Model included the age of the respondent in five-year groups, highest educational level, and survey year.

The difference in the odds ratio when age was added to multivariate model was notable. In order to understand this trend, the percentages of individuals in each age category with the ability to choose their own healthcare was calculated. Table 9 shows the Total Percentages, and NFHS-2 percentages, and the NFHS-3 percentages. Generally-speaking the older age groups have a larger percentage of women who decided alone on personal healthcare. About one third of women aged 40-49 reported deciding on healthcare alone. However, the younger age categories showed the largest increases in the percentage of individuals who decided on personal health alone. For women aged 15-19, there was a 4% increase in healthcare decision making

from NFHS-2 to NFHS-3. In the age group 20-24, for NFHS-3 21.17% of the women made the decision on healthcare independently with an increase from 17.78% in NFHS-2. Table 8 shows these percentages in totals and for the two survey years.

Table. 8. Decision Healthcare and Age Group of Respondent

Age Group	Percentage of Respondent that made Healthcare Decision Alone: Total (%)	NFHS-2 (%)	NFHS-3 (%)
15-19	13.25	11.60	15.61
20-24	19.41	17.78	21.17
25-29	25.58	24.59	26.55
30-34	29.59	29.67	29.52
35-39	32.29	32.33	32.26
40-44	33.87	34.25	33.54
45-49	33.74	34.23	33.32
Totals	27.24	26.31	28.14

Decision on Staying with Relatives

The second main dependent variable that was analyzed was whether or not the female respondent was able to make an independent decision about staying with relatives.

Overall, the decision-making ability increased in NFHS-3 but there was only a slight (2%) increase. In NFHS-2, 10.4% of the respondents indicated that they made the decision to stay with family alone. In NFHS-3, 12.5% of the women stated that they decided individually on visiting relatives and based on a chi square test this was a statistically significant increase Table 9 below, shows the numbers and percentages for this variable.

Table 9. Decision on Staying with Relatives

Variable		NFHS-2 (%)	NFHS-3 (%)	N (%)
Decision on Staying with Family and Friends	Other than Respondent Alone	75,977 (89.6)	76,899 (87.5)	152,876 (88.5)
	Respondent	8,857 (10.4)	10,956 (12.5)	19,813 (11.5)
	Total	84,834	87,855	172,787
	Missing	28	70	98

In order to further examine the relationship between the decision to stay with family, separate analyses were performed stratifying between urban and rural study populations. For this question, overall a larger percentage of the urban resident stated that they decide alone to visit family but the percentage is still only 13.7%. When examining this change over the two survey years, the analysis suggests that overall there was a significant increase in women who were able to make this decision alone ($p < 0.05$ for chi-square test). However, this was only significant for the rural populations and not for the urban. The significance for the total sample and rural residents is significant at a <0.01 .

A multivariate model was constructed that for this variable that is the same as the “healthcare” variable. A univariate model was constructed as well to calculate the crude odds ratio. For these calculations, NFHS-2 was the referent group in order to show the changes between survey years. According to the simple model, the odds of a respondent making the decision to stay with family on their own was 1.23 times higher in NFHS-3 than in NFHS-2.

This trend was also seen in the additional multivariate models. The change in the urban population did not show the increase in the univariate model but when the other covariates were added, the odds increased. The odds ratio for urban women was 0.96 in the univariate model and

0.94 in the multivariate model. When stratified on age, the odds ratio for urban women and deciding to stay with relatives was 1.25 more likely in NFHS-3 than in NFHS-2. Education level as a covariate in the multivariate model produced an odds ratio of 1.04 for urban women.

The odds ratio for the rural population showed the largest increase in likelihood that the decision about staying with relatives would be made alone. In the univariate model, the odds of a rural women was 1.36 more likely to make the decision about staying with family alone in NFHS-3 than in NFHS-2. The multivariate model produced an odds ratio for rural women of 1.28 for the survey year. When the results were stratified on age, the odds of rural women have the decision making ability was 1.26 times higher in NFHS-3. When education level was a covariate, an odds ratio of 1.15 was estimated for rural women. Table 10 shows the odds for each of these categories.

Table 10. Decision on Staying with Relatives and Selected Socioeconomic Indicators

Model Type	Odds of Respondent making decision on Staying Family Independently	Urban: Odds Ratio	Rural: Odds Ratio
Univariate (95% Confidence Interval)	1.23 (1.19-1.26)	0.96 (0.92-1.01)	1.36 (1.31-1.42)
Multivariate: Survey Year	1.15	0.94	1.28
Multivariate: Age in Five Year Range	1.26	1.25	1.26
Multivariate: Education Level	1.13	1.04	1.15

As with the healthcare decision, age played a role in the decision-making level. Table 13 shows the percentage of the study population in each age group that decided alone to stay with family. The overall percentage increased but there was less change when compared to the decision on healthcare. Similarly, the older age categories had a larger percentage of independent decision-making. For age groups 15-19, there was only a little more than 1% increase in the percentage of women who reporting being able to decide alone to stay with

relatives. For women aged 20-25 and 25-29, there was about a 2% in the proportion of women who decided independently to stay with relatives. Table 11 below shows the numbers and percentage of women separated into age categories.

Table 11. Staying with Family and Friends and Age of Respondents

Age Group	Percentage of Respondents that Made the Decision about Staying with Family and Friends Alone: Totals	NFHS-2	NFHS-3
15-19	3.98	3.43	4.76
20-24	6.60	5.73	7.54
25-29	9.56	8.82	10.29
30-34	12.37	11.68	13.01
35-39	14.28	13.48	14.98
40-44	16.37	15.30	17.27
45-49	17.29	16.55	17.93
Totals	11.47	10.44	12.47

Chapter V

DISCUSSION AND CONCLUSION

5.1 Discussion

The purpose of this study was to assess one aspect of social change, the level of individual decision-making by women. The amount of change was formulated by comparing two years of the same survey. The two areas of female decision-making selected for analysis were the ability to decide on personal healthcare and the freedom to choose to stay away from the home with family or friends.

This study attempted to answer the following research questions.

1. Based on select questions from the Women's Questionnaire, did the level of decision-making increase or decrease in period between NFHS-2 and NFHS-3?
2. Does the place of residence impact or effect the level of decision-making reported by the participants?
3. Does age or education influence the individual's level of decision-making in the household?

The initial binary logistic regression compared the level of decision making by analyzing the answers provided for two questions in the NFHS-2 and NFHS-3. The first question analyzed asked about personal healthcare decisions. Less than one third of the respondents indicated that they make decisions about their own healthcare individually. In the NFHS-2 only 26.3% of the respondents indicated that they alone decided how to handle their personal healthcare. The percentage of women in NFHS-3 who made the healthcare decision themselves increased slightly to 28.1%. The ability to choose one's health services could increase utilization of healthcare facilities. If a woman is not able to freely decide to seek healthcare then care may be

delayed. The lack of freedom to seek healthcare services is an additional barrier faced by women in India.

The level of decision-making varied depending on the location of the respondent. When the analysis included urban women only, the percentage that made decisions about their healthcare alone, increased to 31.4%. For rural women, only 24.7% of the sample made decisions about their healthcare alone. This lack of decision-making ability makes the healthcare situation for rural women even worse. Most rural areas have significantly less healthcare facilities compared to more developed cities. The lack of access to healthcare facilities and the inability to choose when to seek care could become insurmountable barriers to maintaining health and well-being for rural women. Since almost 70% of India's population still resides in rural areas, the number of women who do not have control over their own healthcare could be very large (CensusInfo India Dashboard, 2011). However, the increase in healthcare decision-making in rural women between NFHS-2 and NFHS-3 was of significance.

In the univariate regression model, the odds of rural women making an autonomous decision on their healthcare was 1.18 times higher in the NFHS-3 than in NFHS-2. According to this study, the proportion of the rural women who made their healthcare decision alone increased at a larger rate than urban women. This finding was the same across the different categories in the multivariate regression model. When age and education level were included in the model, rural women were 1.19 and 1.13 times more likely to make decisions about their healthcare alone than in NFHS-2. This means there is a larger increase in decision-making within rural women. For urban women, the rate of change was lower. The difference in the odds of deciding on healthcare alone could be due to many social or environmental factors. Urbanization may play a role in the differences between urban and rural populations.

Age of the sample respondent played a role in the healthcare decision as well. According to this study, the older the individual the larger the percentage of the age group that made healthcare decision alone. The age groups of 40-44 and 45-49 contained the largest percentage of respondents who decided their healthcare alone. This is not surprising since with maturity often comes greater responsibility and higher social standing. According to Gupta and Yesudian, age could a notable enabling factor for gain increased autonomy and mobility (2006). The lower age groups showed the greatest degree of change based on the percentages alone. The 15-19 age range increased by 4% and the 20-24 age range increased by a little over 3% from NFHS-2 to NFHS-3. Since these younger age groups showed the largest increase in healthcare decision-making, this could be an indicator of the shift in social norms. This increase is significant because in many populations the younger individuals are can be the most vulnerable. Increasing the level of empowerment in these vulnerable groups is an important public health concern.

The topic of second question analyzed in this study pertained to the respondent staying away from home with family or friends. The respondent was asked who made the decision about visiting friends and relatives. In NHFS-2, only 10.4% of the study sample indicated that they decided alone to stay with family or friends. In NFHS-3, 12.5% of the study population indicated that they decided to visit family and friends on their own. The difference between the two survey years was significant at 0.00. This question is important because it is an indicator of the level of women's mobility. The lack of mobility in a majority of the study sample is evidence of the lower status of women in India. The power to move freely in a community has often been linked to positive health outcomes.

Place of residence also played a role in the level of mobility within the study sample. For urban residents, 13.7% of the sampled population stated that they alone made the decision to stay

with friends and family. Only 10.1% of the rural individual noted that they had sole decision-making power to visit family and friends. The reasons for these differences could be due to numerous factors. Urban residents may have more exposure to media and popular culture, which may reinforce progressive social norms that allow more freedom of movement. Another potential reason could be the proximity of family and friends in urban areas. Rural villages may require longer travel times and this would increase the barriers to asking permission to travel.

The odds of a married woman choosing to visit family and friends alone were 1.23 times higher in NFHS-3 than in NFHS-2. This means that between the years the survey was administered, the level of mobility in this population increased according to this study. The improvement was greater in rural populations. Rural women were 1.36 times more likely to decide on their own to stay with family or friends. In the multivariate model, rural women were 1.26 and 1.15 times more likely to make this decision alone when age and education level were added to the model. For urban women the only statistically significant increase was in the multivariate model in the age category at 1.25. Since a larger proportion of urban women have decision-making power this might explain the smaller change between survey years.

The age of the respondent influenced the percentage of women who decided alone to stay with family and friends. The same trend was seen in healthcare decision-making. Overall, the age groups increased about 1-2%. The largest percentage of women who decided about visiting family and friends on their own was in the age group 45-49 at 17.93%, followed by 40-44 at 17.27% of the study sample. For the age range of 15-19, the proportion of women who made the decision alone was only 4.76%. This means that less than 5% of the study population aged 15-19 is able to leave their home and stay with friends and family on their own volition. Since these women were probably married relatively recently, it can be assumed that they reside with

their in-laws. In most Indian households, the young brides are expected to learn and listen to their mother-in-laws. The strict hierarchy in the household could explain the restricted mobility for the lower age ranges.

In most categories the level of decision-making seemed to be on the rise. The rural populations showed a larger increase in the number of women who made decision about personal healthcare and staying with friends and family on their own. In both questions, the youngest women had the smallest percentage of individuals with high autonomy and mobility. Given that it was a nationally representative survey, it can be assumed that most young women are not empowered to make crucial decisions about their daily lives. Lack of decision-making power is sign of the lower status of women.

5.2 Study Limitations

The study sample included only currently-married women because the Women's Questionnaire in NFHS-2 was only administered to married women. Similar statistics would be helpful to have on single women in India. The individual level of decision-making is likely influenced by other factors not included in this analysis. Since female empowerment is a complicated social phenomenon, this results should not be generalized. In addition, the questionnaire changed over time so it was not feasible to compare all of the questions pertaining to autonomous decision-making. For example, constructing an index with multiple variables similar other research could provide clear picture of the level of decision-making (Gupta and Yesudian, 2006)

5.3 Conclusion

In most categories the level of Autonomous decision-making seemed to be increasing based on the analysis of data from this nationally-representative survey. The rural populations showed a larger increase in the number of women who made decision about personal healthcare and staying with relatives on their own. In both questions, the youngest women had the smallest percentage of individuals with high autonomy and mobility. Given that it was a nationally representative survey, it can be assumed that most young women are not empowered to make crucial decisions about their daily lives. Lack of decision-making power is sign of the lower status of women.

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